

Y

turns and protect the plants from

the 'chi'a (shown). Other species



the most isolated major island group on earth, the Hawaiian archipelago is 2,400 miles from the nearest continent. The chain reaches from the Big Island of Hawai'i (at about the same latitude as Mexico City) to Kure Atoll 1500 miles to the northwest and is still growing. For at least 81 million years, new islands have been forming as the Pacific Plate moves northwestward over a stationary plume of magma rising from a "hot spot" within the earth's mantle. The fluid rock makes its way up through the ocean floor and countless eruptions over hundreds of thousands of years eventually create a high volcanic island. But the plate's unceasing movement slowly separates the volcano from its source, terminating its growth even as a new volcano rises from the ocean floor over the hot spot. The volcano that formed East

Maui, part of which lies within the boundaries of the national park, last erupted about two cen-

Across vast expanses of ocean, life eventually came to Maui and the other islands in the form of seeds, spores, insects, spiders, birds, and small plants. They drifted on the wind, floated on ocean currents, or hitched a ride on migrating or stormdriven birds. Many groups of organisms (amphibians, reptiles, social insects, and all land mammals except earlier ancestors of the monk seal and of bats) were unable to make the long journey, while some arrived but did not survive in their new home. It is estimated that an average of only one species every 35,000 years successfully colonized the islands.

The survivors found themselves in a land of vast opportunity. The Hawaiian Islands are a mosaic of habitats, from rain forest to alpine, often in close proximity. In the surrounding ocean, rainfall averages 25-30 inches annually. Yet Maui and the other islands, trapping moist trade winds, receive rainfall ranging from more than 400 inches annually on the windward side of the mountains to less than 10 inches on the leeward side. Average temperatures range from 75°F at sea level to 40°F at the summit of the highest volcanges. Isolated by the sea, these mountains have created an extremely diverse environment in a small area.

The colonizers gradually adapted to the environment of the islands and to life without the preda-tors and competitors of their homelands. Eventually most evolved into entirely new (and often defenseless) species found nowhere else in the world. The roughly 10,000 native species of flora and fauna of the Hawaiian Islands are thought to have evolved from about 2,000 colonizing ancestral species.

The isolation which has made the plants and animals of the Hawaiian Islands unique also makes them vulnerable to the rapid changes brought on by humans. Hawaiian species often cope poorly with habitat alterations, foreign diseases, predation, and competition from introduced species. (Today about 20 alien species are introduced to the islands every year.) Thus active intervention by conservation managers has become essential to the survival of the natural heritage of Hawaii.



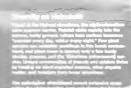
By adapting to a wide vanety of food sources and habitates to a service and habitates to be a service and habitates to be a service and habitates to be a service and the service of from the Americas gave rise to an estimated 52 service of Hawitan honoperspans. The slightly curved bill of the Wahabatan is ideal for feeding on the nexter of native shapes the "akidation foreign of the result of native shapes. The "akidation (probably admits) foreigned nameng leaves and branches; the "akidation feeds on insect faunce and nexter of Volta and botals flowers; do the Made parrotific contains of Volta and botals flowers; do the Made parrotific contains

Endemic species evolved in the Hawaiian Islands from ances-tral colonizers and are unique to a specific area. The Haleakala 'Almahma is a shewsaword endemic to the upper slopes of Haleakalā. This 'Shmahina grows as a compact resette of nar-row slowyr Jawes for up to 50 years before finally flow. After flowering once in its lifetime, the plant dies. The endemic insects which pollinate the Haleakala 'Binshima are sessential to the long-term survival of these fragile plents and are depen-dent on them for nourishment.

> Developed and Agricultural Areas

Poreign species or plants and animate introduced purposety or accordantly by humans are known as alinens. Allers species scale that the properties of the properties of the plants and scale asked the plants are species or such asked the plants scale has kally integer can spread not remote farerist, displac-ing native vegetation. Goats eliminate vegetation, resulting in severe arealow. Mongooses, originally brought to the Hawalian blends to control rate in suger cane flexits, pray on the eggs and young of grown desiring bleds.

The State of trouts comprises only two-tenths of a percent of the total of Lis man bend of the plants and brist Bits did occurs of the state of the plants and brist Bits did considered for pin on the plants of the state of the





Picnic area Hosmer Grove HALEAKALA NATIONAL WILDERNESS AREA KĪPAHULU VALLEY BIOLOGICAL RESERVE CLOSED TO ENTRY CONTRACTOR PROPERTY AND ADDRESS. Hiking Haleakalā Summit Area Trails cultural demonstrate area (with thatched A number of trails in th summit area allow for ула Капро Сар roofed buildings unde trips ranging from less than an hour to as long Kinahulu Araa Trails construction) to Killoa Point at the mouth of the stream. Hikers can swin as three days. There is a %-mile self-guiding. n several pools and nature trail at Hosi passes the 184-foot waterfalls along the low Grove, with a 120-foo waterfall at Makahiki elevation change each way, and a 7-mile nature trail to Leleiwi Overlook, with a 40-foot winding through alien bamboo and guava forests to the base of the 400-foot Wainoku Falls Swimming below) round trip, 15-foot eleva-tion change each way) extends from Külpa elevation change eacl way There are 27 miles of hiking trails within the Wilderness Area Two Kulga Point Loop Trail ( -mile round trip 80-foot elevation change Point, along the shore, to trails, Halemau'u and each way) leaves Kip the Kipahulu came Sliding Sands, enter the ahulu Range Station/ Visitor Center and con-tinues past a Hawaian summit area with a third PACIFIC OCEAN

## **Exploring the Park**

Visitors to the park can explore the summit area or the Kipahulu area on the coast. Park headquarters and the 10,023-foot summit can be reached from Kahului via Hawaii 37 to 377 to 378. Driving time to the summit from the resort areas of Kihei and Ka'anapalı is about two hours. Kipahulu is reached via Hawaii 36 to 360 to 31 Driving time from the resort areas to Kipahulu is three to four hours.

Weather Weather and viewing conditions at the summit are unpredictable and can change rapidly. Be prepared for cold (30-50°F), wet, windy (10-40 mph) weather and intense sun Sunrise is often clear, but expect crowds. Kipahulu is subtropical with light rain showers occurring any time of the year Call 808-871-5054 for the forecast.

Driving Vehicles must remain on roads or in parking areas. Road hazards in and enroute to the park include steep turns. rocks, fog, rain, slippery pavement cattle bicyclists large buses, and heavy traffic. When driving down from the summit of Haleakalä, use lower gears to prevent brake failure. Slower vehicles must use pullouts. If you have mechanical problems, is available at Kipahulu. Public phones are at park headquarters move your vehicle out of traffic and the Kipahulu parking lot lanes while waiting for help

Regulations and Safety Report accidents, violations, unusual incidents, or sightings of alien species to a ranger. Prohibited hunting, firearms, roller blades skate boards, disturbing any natural or cultural feature. Bicy cles are restricted to paved

VALLEY

roads and parking areas. High altitude may complicate nealth conditions and cause breathing difficulties Pregnant women, young children, and those with respiratory or heart conditions should consult their doctor regarding travel to high medical aid if you have problems. The summit is about 30°F colder than the beaches. Weath er conditions change rapidly.

Hypothermia is a possibility any Activities and Facilities Begin your visit by stopping at one of the visitor centers: Park Headquarters Visitor Center (7.000 feet) or Haleakalā Visitor Center (9.740 feet) in the summit area, or the Kipahulu Ranger Station/Visitor Center. An en-

trance fee is charged to enter

and cinder Wilderness Area water supplies are not potable; water should be treated before drinking. Use portable toilets where provided If toilets are not available, bury waste and carry out paperwaste attracts alien ants which kill native species. There are no open fires permitted in the Wil-

Ranger Programs Talks and hikes are offered regularly. Call

or write for details. Groups may

arrange special programs sub-

ject to staffing; call at least one month in advance

Hiking Trails are rugged and

strenuous. Hiking off designated trails and cutting switchbacks

are prohibited; they cause ero-sion and unsightly scars which

mar the scenery for years to

come. Off-trail hikers can un-

and trample unique insect

knowingly crush the roots of native plants like the silversword

species living among the rock

derness Area Sunscreen and plenty of water are essential. Pets Pets must be physically restrained at all times and are the summit area. No food or gas not allowed on trails. Nenë and is available in the park. No water other ground-nesting birds are vulnerable to harassment

and predation

Camping Drive-in camp-grounds are available at Hosme Grove and Kipahulu, on a first-come, first-served basis. No permit is required and no fee is charged. Grills, picnic tables and restrooms are provided at both campgrounds. Hosmer Grove has water NO water is available at Kipahulu. Fires are allowed only in the grills. Wilder ness Area camping is allowed only at Hölus and Paliku. Re quired permits are free and

ed to three nights per month and group size is limited to 12 Wilderness Area Cabins Three primitive cabins, accessible only by hiking or horseback, are in tions are by lottery. Lottery applications must be received two months prior to the first day of the month in which a reserva-tion is requested. Cabins are rented to one group of up to 12 people per night. Stays are limit-

available on a first-come, first-served basis at park headquar

ters on the day of the trip. At all campgrounds, stays are limit

ed to three nights per month. Swimming Kipahulu streams are very dangerous at high water; the water can rise 4 feet 10 minutes. People have lost their lives by ignoring warnings

Swimming is also not recommended when streams are stagnant and not flowing. Ocean swimming is not recommended

due to high surf and currents Plants and Animals Remove seeds from boots, rain gear, and tents before entering the park. One of the greatest threats to native species is the introduc-tion of alien plants, seeds, and animals. Although some species such as the nene (Hawaiian goose) act tame, they are wild Do not feed nene or other wildlife Feeding causes the animals to beg and endangers them as they approach moving

tures. Do not gather and stack rocks in ahu (piles) along roads and trails and at overlooks. Ahu built long ago by Hawaiians are important cultural artifacts and should not be imitated or des-

Auport

Kipahulu Visitor Center

Administration The park is part of the National Park System one of more than 370 parks that are important examples of our nation's natural and cultural her itage. It is administered by the National Park Service ILS Department of the Interior. For more information about the park contact: Haleakala National Park, P.O. Box 369, Makawao. HI 96768, phone 808-572-9306

Internet www.nps.gov/hale



Haleakala